Draft Health Impact Assessment of the Fourth Cycle River Basin Management Plans (2027-2033) in Wales

Summary Report

Environmental and Health Assessment Team

Rev No: 1 (For consultation)

Introduction

Natural Resources Wales (NRW) has undertaken a Health Impact Assessment (HIA) of the fourth cycle River Basin Management Plans (RBMPs) for the Western Wales River Basin District and the Welsh parts of the Dee and Severn River Basin Districts.
The assessment has been completed in accordance with the Public Health (Wales) Act 2017 and the Health Impact Assessment (Wales) Regulations 2025.

The purpose of the assessment is to understand how the RBMPs may affect the physical and mental health and wellbeing of people in Wales, identify potential impacts on health inequalities, and recommend measures to maximise health benefits while reducing potential adverse effects.

The HIA also supports the sustainable development principle set out in the Well-being of Future Generations (Wales) Act 2015, contributing particularly to the wellbeing goals of A Healthier Wales, A More Equal Wales and A Resilient Wales. The assessment also supports A Wales of Cohesive Communities, A Wales of Vibrant Culture and Thriving Welsh Language, and A Globally Responsible Wales by considering opportunities to support environmental quality, community resilience, access to blue-green spaces, protection of natural and cultural assets, sustainable resource management and climate adaptation.

The HIA recognises that many of the health, wellbeing and equity issues are considered pre-existing and influenced by a wide range of environmental, social and economic factors beyond the RBMPs. The assessment therefore considers how the RBMPs and their implementation may contribute to improving these conditions, maximise opportunities for health gain, help address existing risks and inequalities and avoid or mitigate unintended consequences.

Key findings at a glance

The Health Impact Assessment found that the fourth cycle River Basin Management Plans provide an important opportunity to contribute to significant long-term benefits for health and wellbeing across Wales by protecting and improving the environmental conditions that support healthier and more resilient communities.

Key opportunities identified by the assessment include:

- improved water quality, reducing exposure to harmful pollutants, pathogens and contaminants;
- improved rivers, lakes, estuaries and coastal waters, supporting recreation, physical activity and mental wellbeing;
- enhanced resilience to flooding, drought and climate change, helping to reduce risk to communities, services and infrastructure;
- improved biodiversity, environmental quality and access to blue-green spaces; and
- opportunities to reduce health inequalities through targeted investment and environmental improvement.

These opportunities are particularly relevant to communities currently facing environmental disadvantage, including deprived communities, rural communities, private water supply users, coastal communities and communities at greater risk of flooding. The extent to which these benefits are realised will depend on successful implementation of the RBMPs alongside wider policies, investment and actions across relevant organisations and sectors.

The HIA also identified existing pressures and possibility unintended consequences that need to be considered during RBMP implementation. These include affordability pressures, uneven distribution of benefits, communication and accessibility barriers, workforce and delivery capacity constraints, and governance challenges. Some arise from the wider context within which the RBMPs are delivered, while others could be created or exacerbated through implementation if not appropriately managed. The assessment found that these risks can generally be reduced through effective planning, targeted support, ongoing engagement and proportionate implementation.

Four strategic priorities were identified as critical to successful delivery:

- strengthening governance and accountability;
- targeting interventions towards communities experiencing the greatest inequalities;
- improving support for vulnerable groups, including private water supply users; and
- monitoring health, wellbeing and equity outcomes alongside environmental outcomes.

What are the River Basin Management Plans?

River Basin Management Plans (RBMPs) are strategic plans prepared under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. They describe the condition of rivers, lakes, groundwater, estuaries and coastal waters, identify the main pressures affecting them, and set out the actions required to protect and improve the water environment.

RBMPs take a catchment-based approach to water management, recognising the links between water, ecosystems, communities and economic activity. First published in 2009, they are reviewed and updated every six years. The fourth cycle RBMPs cover the period 2027 to 2033 and build on previous planning cycles through updated evidence, stakeholder engagement and lessons learned from implementation.

The fourth cycle RBMPs are being developed during a period of significant change in water policy and regulation. In 2024, the UK and Welsh Governments established the Independent Water Commission, led by Sir Jon Cunliffe, to consider reforms to the water sector and regulatory framework. The Commission highlighted the importance of creating a resilient and sustainable water sector that delivers environmental improvement, climate resilience and benefits for communities.

Of particular relevance to this Health Impact Assessment, the Commission recognised the growing importance of embedding public health within water management and decision-making, including the wider health and wellbeing benefits associated with healthy water environments. Together with recent legal and regulatory developments, these changes

reinforce the increasing recognition that healthy water environments are essential not only for ecological recovery, but also for public health, wellbeing and climate resilience.

Study area

This Health Impact Assessment covers the River Basin Management Plans for the Western Wales River Basin District and the Welsh parts of the Dee and Severn River Basin Districts.

Natural Resources Wales leads the preparation of the Western Wales and Dee RBMPs and works closely with the Environment Agency on the cross-border Dee and Severn River Basin Districts.

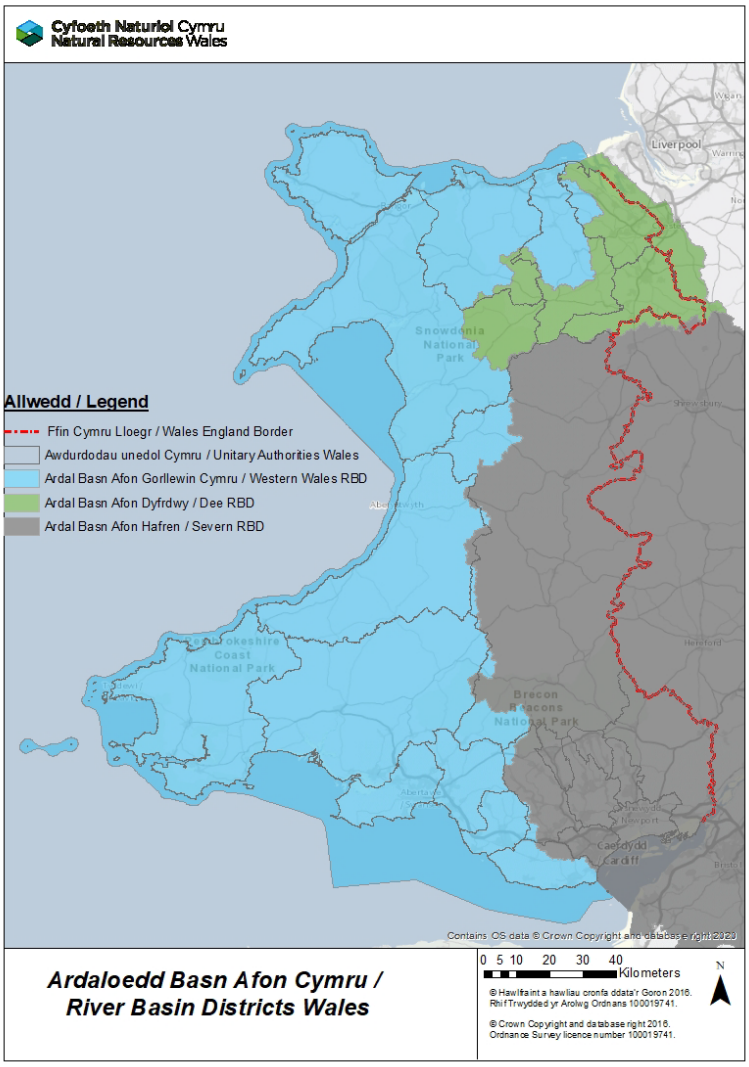
Together, these river basin districts encompass communities across Wales and provide the framework for protecting and improving rivers, lakes, groundwater, estuaries and coastal waters.

The Western Wales River Basin District covers approximately 16,653 km² and extends from the Vale of Glamorgan in the south to Denbighshire in the north.

The Dee River Basin District covers approximately 2,251 km² across north-east Wales and extends into neighbouring parts of England.

The Severn River Basin District covers more than 21,000 km² across Wales and England, with this assessment focusing on the Welsh catchments, including the Rivers Wye and Usk and communities across south-east and mid-Wales.

Figure 1: Western Wales and Welsh parts of the Dee and Severn River Basin Districts with local authority boundaries



How the assessment was undertaken

The Health Impact Assessment followed the methodology developed by the Wales Health Impact Assessment Support Unit (WHIASU) and was undertaken alongside the Strategic Environmental Assessment.

Evidence was gathered from a range of sources, including a population and communities profile for Wales, stakeholder workshops, consultation responses, expert engagement and a review of relevant scientific and policy literature.

To assess the potential health effects of the RBMPs, the Programme of Measures and Significant Water Management Issues were reviewed and grouped into a series of thematic health clusters. This recognised that many environmental pressures influence health through common pathways, including water quality, chemical and microbial

exposure, flooding, climate resilience, access to nature, drinking water safety and wider social, economic and governance factors.

Measures were assessed through both direct pathways, such as exposure to contaminated water or flood risk, and indirect or system-level pathways, such as impacts on mental wellbeing, community resilience, environmental quality, economic conditions and public confidence.

The clustering approach enabled the assessment to consider cumulative and interacting effects across the water environment, rather than assessing individual measures in isolation. This provided a more realistic understanding of how the RBMPs may affect health, wellbeing and health inequalities at local, regional and national scales.

The assessment considered physical health, mental wellbeing, wider determinants of health, health inequalities, and direct, indirect and cumulative impacts. A detailed Health Impact Assessment Matrix is provided in Appendix A.

Population groups considered

The assessment considered impacts on the population of Wales as a whole while recognising that some groups may be affected differently because of existing health, social, economic or environmental circumstances.

Particular consideration was given to communities experiencing deprivation, rural communities, private water supply users, children and young people, older adults, coastal communities, communities vulnerable to flooding, pollution or environmental disadvantage, and people living with long-term health conditions. Potential impacts on farmers, rural businesses and communities experiencing multiple disadvantages were also considered. Detailed information on affected population groups is provided within Appendix A.

Consideration of these groups does not imply that the RBMPs are responsible for existing inequalities or vulnerabilities; rather, it helps to identify where implementation may provide opportunities for greater health gain or where unintended effects could disproportionately affect particular populations.

Summary of health impacts

The Health Impact Assessment found that the fourth cycle River Basin Management Plans have the potential to contribute to substantial positive health and wellbeing benefits across Wales. Many of these benefits arise from the close relationship between environmental quality and human health. By supporting improvements in the condition of rivers, lakes, estuaries, groundwater and coastal waters, the plans have the potential to influence health and wellbeing, community resilience and the wider social and environmental conditions that shape health.

The assessment identified a range of direct, indirect and system-level pathways through which the plans and their implementation may influence health and wellbeing. These

include reducing exposure to pollutants and pathogens, improving drinking water quality, increasing resilience to flooding and climate change, enhancing access to blue-green spaces, strengthening community wellbeing and supporting greater confidence in environmental management.

Overall, the majority of anticipated impacts were assessed as positive, long-term in nature and most likely to be realised where relevant programmes of measures are successfully implemented. Improvements to water quality, drinking water safety, climate resilience, biodiversity and nature recovery were identified as having the greatest potential to contribute to health and wellbeing benefits.

The assessment also recognised existing pressures alongside a number of potential adverse or unintended effects. Some of these pressures exist independently of the RBMPs, while others may arise or be exacerbated through implementation. These include affordability pressures, compliance and regulatory costs for businesses and land managers, temporary disruption associated with construction and restoration activities, and the risk that benefits are not distributed equitably across communities. The HIA identifies opportunities for RBMP implementation to help address existing pressures while ensuring that new or additional adverse effects are avoided or mitigated.

Physical health

The assessment identified a range of positive physical health outcomes to which implementation of the plans may contribute. Improvements in water quality are expected to reduce exposure to harmful pollutants, pathogens and contaminants, helping to protect public health and improve the safety of recreational waters. Measures to protect drinking water resources and strengthen the resilience of water supplies are also expected to contribute to improved health outcomes, particularly for communities that are more vulnerable to environmental risks.

Enhancing resilience to flooding, drought and the impacts of climate change can deliver benefits that extend beyond the protection of people, property and infrastructure. These include reduced risks to health, improved reliability of essential services and greater resilience of communities to future environmental pressures. Potential adverse physical health impacts associated specifically with delivery of the RBMP measures are primarily associated with short-term disruption arising from construction, restoration and infrastructure improvement works.

Mental health and wellbeing

The assessment found strong evidence that healthier and more accessible water environments can support positive mental health and wellbeing outcomes. Where RBMP measures contribute to improvements in rivers, lakes, estuaries and coastal waters can enhance opportunities for recreation, physical activity and engagement with nature, all of which are recognised contributors to wellbeing.

Cleaner and more attractive blue-green spaces can also strengthen community pride, support social interaction, encourage volunteering and community stewardship, and contribute to a stronger sense of place. Enhancing resilience to flooding and climate

change may further reduce anxiety associated with environmental risks, strengthen community confidence and improve overall wellbeing.

Potential adverse effects on wellbeing may arise where communities experience uncertainty regarding environmental change, disruption associated with delivery of measures, changes to land use, or where expected environmental improvements are not realised within anticipated timescales. Other mental health and wellbeing pressures, including anxiety associated with flooding, pollution and environmental decline, are pre-existing and influenced by a range of factors. RBMP implementation may contribute to addressing these pressures and supporting improved wellbeing.

Wider determinants of health

Many of the most significant opportunities identified by the assessment relate to the wider determinants of health, including the social, economic and environmental conditions in which people live. The plans have the potential to contribute positively to environmental quality, biodiversity, climate resilience, access to nature, recreation opportunities, community cohesion and the resilience of communities and infrastructure.

These improvements have the potential to create conditions that support healthier lives and more sustainable communities over the long term. However, some measures may result in additional costs, operational changes or regulatory requirements for households, businesses, farmers and land managers. If not managed appropriately, these impacts could affect affordability, livelihoods and perceptions of fairness.

Health inequalities

A key finding of the assessment is that the RBMPs provide important opportunities to help address existing health inequalities across Wales. Many of the environmental pressures considered by the plans, including poor water quality, flooding, environmental degradation and limited access to high-quality blue-green spaces, already disproportionately affect communities experiencing poorer health outcomes and socio-economic disadvantage.

The greatest opportunities for health gain are likely to be realised where investment and interventions are targeted towards deprived communities, rural communities, private water supply users, coastal communities and areas at increased risk of flooding. By contributing to improved environmental conditions in these areas, the plans have the potential to help address some of the underlying factors that contribute to health inequalities.

The assessment identified private water supply users as a particularly important population group requiring continued attention during implementation because of their existing and potential vulnerability to microbiological, chemical, infrastructure and drought-related risks.

Enhancing resilience to flooding, drought and climate change can also contribute to reducing inequalities where actions are targeted towards communities facing the greatest environmental disadvantages.
Benefits may include reduced anxiety and stress associated with environmental risks, greater resilience of essential services and improved access to opportunities and community assets.

However, positive outcomes cannot be assumed. Health inequalities could widen if benefits are distributed unevenly, affordability pressures create additional burdens for vulnerable households and businesses, or some communities face barriers to information, engagement or access to environmental improvements. Effective implementation, targeted investment and inclusive engagement will therefore be critical to ensuring that the benefits of the plans are shared fairly across Wales.

Mitigation, enhancement and priority actions

The Health Impact Assessment identified a range of measures that could maximise positive health and wellbeing outcomes, help address existing vulnerabilities and reduce potential adverse effects associated with implementation of the River Basin Management Plans. These include prioritising investment in deprived, rural and high-risk communities, protecting affordability for vulnerable households, supporting farmers and rural businesses through transition, strengthening protection of private water supplies, improving access to blue-green spaces, and enhancing environmental, health and wellbeing monitoring.

A consistent finding across the assessment was that the scale and distribution of health and wellbeing outcomes influenced by RBMPs will depend on the successful delivery of the plans. While the RBMPs provide a strong framework for improving environmental conditions that support health and wellbeing, they form part of a wider system of policies, interventions and delivery responsibilities and cannot alone determine he outcomes. Effective implementation, appropriate resources, strong governance, meaningful stakeholder engagement and equitable targeting of interventions will all be critical in determining whether the anticipated benefits are achieved and shared fairly across communities.

The assessment also identified several cross-cutting existing and implementation-related issues that may influence delivery. These include governance and accountability, health and environmental inequalities, affordability, workforce capacity, communication and accessibility, protection of private water supplies, and the monitoring of health and wellbeing outcomes alongside environmental outcomes.

Four strategic priorities were identified as critical to successful delivery:

- Strengthening governance and accountability.
- Targeting health and environmental inequalities.
- Improving support for vulnerable and higher-risk communities.
- Monitoring health, wellbeing and equity outcomes alongside environmental outcomes.

Detailed mitigation and enhancement measures are set out within the Health Impact Assessment Matrix (Appendix A). These measures have been developed to maximise positive health and wellbeing outcomes, reduce potential adverse effects and make use of opportunities presented through RBMP delivery to help address existing vulnerabilities and inequities. Further information on cross-cutting implementation issues and strategic priorities is provided in Appendix B.

Monitoring and future review

The Health Impact Assessment will remain a live assessment throughout the development and implementation of the fourth cycle River Basin Management Plans.

Monitoring and evaluation will examine the extent to which the findings of the HIA have influenced decision-making and implementation, whether mitigation and enhancement measures have been delivered, whether anticipated health and wellbeing impacts are occurring, and how the plans may be contributing to changes in health inequalities over time. Monitoring will also consider the experiences of communities and stakeholders, including whether environmental improvements are being delivered equitably and whether any unintended consequences emerge during implementation.

The assessment identified a particular need to strengthen understanding of the relationship between environmental improvements and health and wellbeing outcomes. Changes in population health and wellbeing are influenced by multiple factors and cannot generally be attributed to the River Basin Management Plans alone. Monitoring can, however, help identify whether the conditions known to support better health, wellbeing and resilience are improving over time. and the contribution RBMP implementation may be making to those conditions. Monitoring arrangements should therefore consider environmental indicators alongside wider measures of wellbeing, resilience, access to nature and the equitable distribution of benefits.

The findings will support adaptive management, inform future RBMP review cycles and help identify opportunities to maximise health and wellbeing benefits while reducing potential adverse impacts.

Overall conclusion

The Health Impact Assessment concludes that the fourth cycle River Basin Management Plans provide a significant opportunity to contribute to long term improvements in the health and wellbeing of people across Wales.

Improvements in water quality, drinking water safety, environmental quality, biodiversity, climate resilience and access to blue-green spaces can support positive physical and mental health and wellbeing outcomes whilst contributing to wider social, environmental and economic wellbeing. The assessment also identified important opportunities for RBMP implementation to contribute to community resilience, improve wellbeing, enhance access to nature and reduce existing health inequalities.

Many of these potential benefits are particularly relevant to communities currently facing environmental disadvantage, including deprived communities, rural communities, private water supply users, coastal communities and communities at greater risk of flooding. Equitable and targeted implementation of the RBMPs could therefore make an important contribution towards a healthier and more equal Wales.

Overall, the assessment identified predominantly positive potential health and wellbeing impacts, the majority of which were assessed as moderate to major in magnitude, probable or confirmed in likelihood, and long-term in duration. The assessment also identified existing pressures and vulnerabilities, alongside potential adverse impacts associated with RBMP implementation. These include affordability pressures, regulatory requirements, communication barriers and the distribution of benefits. Where impacts arise from implementation, they are generally considered capable of being reduced through appropriate mitigation and targeted delivery. Existing pressures and vulnerabilities present opportunities for the RBMPs to contribute to wider action to address them.

Importantly, realisation of the anticipated health and wellbeing benefits will depend not only on effective implementation of the RBMPs, but also on wider policies, investment and action across relevant organisations and sectors. Strong governance and accountability, adequate workforce capacity and resources, equitable investment, effective communication and engagement, and ongoing monitoring of both environmental and population health and wellbeing outcomes will be critical.

Overall, the River Basin Management Plans represent a significant opportunity to contribute to creating and strengthening the environmental, social and community conditions that support better health and wellbeing outcomes, while contributing to a healthier, more equal, more resilient and more sustainable Wales.